

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

October 12, 1978

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. Albert Schwencer, Chief
Operating Reactors Branch 1
Division of Reactor Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Serial No. 502/082878
LQA/RMN:esh

Docket Nos. 50-280
50-281

License Nos. DPR-32
DPR-37

Dear Mr. Denton:

AMENDMENT TO OPERATING LICENSE
SURRY POWER STATION UNIT NOS. 1 & 2
PROPOSED TECHNICAL SPECIFICATION CHANGE NO. 72

Pursuant to 10 CFR 50.90, the Virginia Electric and Power Company hereby requests an amendment, in the form of changes to the Technical Specifications, to Operating License Nos. DPR-32 and DPR-37 for Surry Power Station, Unit Nos. 1 and 2. The proposed changes are enclosed and have been designated as Change No. 72.

The proposed amendment is in response to Mr. Schwencer's letter of August 28, 1978, requesting that we develop Technical Specifications to ensure the operability of the overpressure protection system. We have described the design concept in a letter to Mr. Rusche dated February 25, 1977. It was approved in a letter dated May 5, 1977 from Mr. R. W. Reid of your staff.

The proposed Technical Specification Change will enhance safety by insuring that the Reactor Coolant System (RCS) is not overpressurized. It will require two Power Operated Relief Valves (PORVs) and a maximum of one charging pump to be operable when the RCS is water solid and the reactor vessel head is bolted. Also, a reactor coolant pump may not be started if the RCS is water solid and more than 50°F cooler than the secondary water in the steam generators. One PORV alone can relieve the system with one charging pump operating at full flow or reactor coolant circulating through a steam generator filled with water 50°F hotter than the RCS and still not exceed 10 CFR 50, Appendix G limits even if the RCS is water solid. Two PORVs provide adequate relief capability even if one should become inoperable. If the reactor vessel head is unbolted then the RCS will be relieved by leakage past the seals at a pressure less than 100 psig. The proposed change does not represent an unreviewed safety question.

The proposed changes have been determined to be a Class III amendment for Unit 1. The amendment involves a single safety issue and does not involve a significant hazards consideration. The proposed change is Class I for Unit 2 since it is duplicated. Accordingly, a check in the amount of \$4400.00 is attached in payment of the \$4000.00 and \$400.00 fees.

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This proposed change has been reviewed and approved by the Station Nuclear Safety and Operating Committee, and the System Nuclear Safety and Operating Committee. It has been determined that this request does not involve an unreviewed safety question, as defined in 10 CFR 50.59.

Very truly yours,

C. M. Stallings

C. M. Stallings
Vice President-Power Station
and Production Operations

Attachments:

1. Proposed Technical Specification
2. Voucher check no. 33551, in the amount of \$4400.00

cc: Mr. James P. O'Reilly, Director
Office of Inspections and Enforcement
Region II

COMMONWEALTH OF VIRGINIA)
) S. S.
CITY OF RICHMOND)

Before me, a Notary Public, in and for the City and Commonwealth aforesaid, today personally appeared C. M. Stallings, who being duly sworn, made oath and said (1) that he is Vice President-Power Supply and Production Operations, of the Virginia Electric and Power Company, (2) that he is duly authorized to execute and file the foregoing Amendment in behalf of that Company, and (3) that the statements in the Amendment are true to the best of his knowledge and belief.

Given under my hand and notarial seal this 12th day of October, 1979.

My Commission expires January 20, 1981.

Robert M. Neil
Notary Public

(SEAL)

1.3. 3.1-2

plant shall be shutdown and the reactor made subcritical by inserting all control banks into the core. The shutdown rods may remain withdrawn.

- c. A minimum of one pump in a non-isolated loop, or one residual heat removal pump and its associated flow path, shall be in operation during reactor coolant boron concentration reduction.
- d. Reactor power shall not exceed 50% of rated power with only two pumps in operation unless the overtemperature ΔT trip setpoints have been changed in accordance with Section 2.3, after which power shall not exceed 60% with the inactive loop stop valves open and 65% with the inactive loop stop valves closed.
- e. When all three pumps have been idle for > 15 minutes, the first pump shall not be started unless: (1) a bubble exists in the pressurizer or (2) the secondary water temperature of each steam generator is less than 50°F above each of the RCS cold leg temperatures.

2. Steam Generator

A minimum of two steam generators in non-isolated loops shall be operable when the average reactor coolant temperature is greater than 350°F.

3. Pressurizer Safety Valves

- a. One valve shall be operable whenever the head is on the reactor vessel, except during hydrostatic tests.

- 13 3.2-3
4. System piping and valves shall be operable to the extent of establishing two flow paths to the core; one flow path from the boric acid tanks to the charging pumps and a flow path from the refueling water storage tank to the charging pumps.
 5. Two channels of heat tracing shall be operable for the flow paths requiring heat tracing.

D. The requirements of Specifications B and C above may be modified to allow one of the following components to be inoperable at any one time. If the system is not restored within the time period specified, the reactor shall be placed in the hot shutdown conditions. If the requirements of Specification 3.2.B and C are not satisfied within an additional 48 hours, the reactor shall be placed in the cold shutdown condition.

1. One of the stipulated boric acid transfer pumps may be inoperable for a period not to exceed 24 hours provided immediate attention is directed to making repairs.
2. Two charging pumps may be inoperable subject to the provisions of Specification 3.3-B.
3. One heat tracing circuit may be inoperable for a period not to exceed 24 hours provided immediate attention is directed to making repairs.

E. When the Reactor Coolant System is water solid and the Reactor Vessel head is bolted, the below conditions shall be met for the affected unit:

1. A maximum of one charging pump operable.
2. Two charging pumps shall be demonstrated inoperable at least once per 12 hours by verifying the motor circuit breakers have been removed from their power supply or the benchboard control switch is on the "Pull-to-Lock" position.

tank is specified to maintain solution solubility at the specified low temperature limit of 145°F. For redundancy, two channels of heat tracing are installed on lines normally containing concentrated boric acid solution.

The Boric Acid Tank(s), which are located above the Boron Injection Tank(s), are supplied with level alarms, which would annunciate if a leak in the system occurred.

The limitation for a maximum of one charging pump allowance operable and the surveillance required to verify that two charging pumps are inoperable when RCS is water solid provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

References

FSAR Section 9.1 Chemical and Volume Control System

C. When the Reactor Coolant System is water solid and the reactor vessel head is bolted, the below conditions shall be met for the affected unit:

1. A maximum of one charging pump operable.
2. Two charging pumps shall be demonstrated inoperable at least once per 12 hours by verifying the motor circuit breakers have been removed from their power supply or the benchboard control switch is in the "PULL-TO-LOCK" position.

Basis (Continued)

The limitation for a maximum of one charging pump allowed operable and the surveillance required to verify that two charging pumps are inoperable when the RCS is water solid provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

3.22 REACTOR VESSEL OVERPRESSURE MITIGATING SYSTEM

Applicability

Applies to the operating status of the Reactor vessel overpressure mitigating system.

Objective

To define those limiting conditions for operation that are necessary to ensure that the reactor vessel will be protected against overpressurization when the Reactor Coolant System is water solid.

Specifications

- A. When the Reactor Coolant System is water solid, and the reactor vessel head is bolted, the below condition shall be met:
1. Two power operated relief valves (PORV's) with a lifting setting of ≤ 435 psig shall be operable.
- B. The requirements of Specification 3.22.A may be modified as follows:
1. One PORV may be inoperable for a period not to exceed 7 days. If the inoperable PORV is not restored to operable status within 7 days, then depressurize the RCS and open one PORV within the next 8 hours.
 2. With both PORV's inoperable, depressurize the RCS within 8 hours. When the RCS has been depressurized, open one PORV or establish the conditions listed below. Maintain the RCS depressurized until both PORV's have been restored to operable status.
 - a. A maximum Pressurizer level of 25%
 - b. The series RHR inlet valves opened and their respective breakers locked open or an alternate letdown path operable.
 - c. Limit charging flow to less than 150 gpm.
 - d. Safety injection accumulator discharge valves closed and their respective breakers locked open.
 - e. A maximum of one charging pump operable.

Specifications (Continued)

3. When the conditions noted in 3.22.B.2a through 3.22.B.2e above are required to be established, their implementation shall be verified at least once per 12 hours.

C. In the event that the Reactor Vessel Overpressure Mitigating System is used to mitigate a RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.6.4 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVs or the administrative controls on the transient and any corrective actions necessary to prevent recurrence.

Basis

The operability of two PORVs or the RCS vented through an opened PORV ensures that the Reactor Vessel will be protected from pressure transients which could exceed the limits of Appendix G to 10 CFR Part 50 when the Reactor Coolant System is water solid and the Reactor Vessel Head bolted. A single PORV has adequate relieving capability to protect the Reactor Vessel from overpressurization when the transient is limited to either (1) the start of an idle Reactor Coolant Pump with the secondary water temperature of a steam generator $\leq 50^{\circ}\text{F}$ above the RCS cold leg temperature or (2) the start of a charging pump and its injection into a water solid RCS.

The requirements of this specification will only be applicable when the Reactor Vessel head is bolted. When the Reactor Vessel head is unbolted, a RCS pressure of < 100 psig will lift the head thereby creating a relieving capability equivalent to a least one PORV.

When both PORV are inoperable and it is impossible to manually open at least one PORV, additional administrative controls shall be implemented to prevent a pressure transient that would exceed the limits of Appendix G to 10 CFR Part 50. A maximum Pressurizer level of 25% has been selected to provide sufficient time, at least 10 minutes, for operator response in case of a malfunction resulting in maximum

Basis (Continued)

charging flow from one charging pump (600 gpm).

TABLE 4.1-1 (Continued)

	<u>Channel Description</u>	<u>Check</u>	<u>Calibrate</u>	<u>Test</u>	<u>Remarks</u>
25.	Turbine First Stage Pressure	S	R	M	
26.	Emergency Plan Radiation Instruments	*M	R	M	
27.	Environmental Radiation Monitors	*M	N.A.	N.A.	TLD Dosimeters
28.	Logic Channel Testing	N.A.	N.A.	M	
29.	Turbine Overspeed Protection Trip Channel (Electrical)	N.A.	R	R	
30.	Turbine Trip Set Point	N.A.	R.	R	Stop valve closure or low EH fluid pressure
31.	Seismic Instrumentation	M	SA	M	
32.	Reactor Trip Breaker	N.A.	N.A.	M	
33.	Reactor Coolant Pressure (Low)	N.A.	R	N.A.	

S - Each Shift

D - Daily

W - Weekly

NA - Not applicable

SA - Semiannually

Q - Every 90 effective full power days

M - Monthly

P - Prior to each startup if not done previous week

R - Each Refueling Shutdown

BW - Every two weeks

AP - After each startup if not done previous week

* See Specification 4.1D

TABLE 4.1.2A (CONTINUED)

<u>DESCRIPTION</u>	<u>TEST</u>	<u>FREQUENCY</u>	<u>FSAR SECTION REFERENCE</u>
16. Reactor Vessel Overpressure Mitigating System (except backup air supply)	Functional & Setpoint	Prior to placing the RCS in a water solid condition and monthly while the RCS is water solid and the Reactor Vessel Head is bolted.	None
17. Reactor Vessel Overpressure Mitigating System Backup Air Supply	Setpoint	Refueling	None

- c. With no fire suppression water system operable, within 24 hours; notify the Commission outlining the action taken and the plans and schedule for restoring the system to operable status.
- d. With redundant fire suppression water system component inoperable for more than 14 days, submit a Special Report to the Commission within the next 10 days outlining the cause of inoperability and the plans for restoring the component to operable status.
- e. With the CO₂ fire protection system inoperable for more than 14 days, submit a Special Report to the Commission within the next 10 days outlining the cause of inoperability and the plans for restoring the system to operable status.
- f. With the Records Vault halon fire protection system inoperable for more than 14 days, submit a Special Report to the Commission within the next 10 days outlining the cause of inoperability and the plans for restoring the system to operable status.
- g. In the event that the Reactor Vessel Overpressure Mitigating System is used to mitigate a RCS pressure transient, submit a Special Report to the Commission within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVs or the administrative controls on the transient and any corrective action necessary to prevent recurrence.